

INTERNATIONAL SEARCH REPORT

International Application No
PCT/U S2004/041392

A CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L33/00

According to International Patent Classification (IPC) or to both national classification and IPC

B FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 HOIL

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate of the relevant passages	Relevant to claim No
X	US 6 184 544 B1 (TODA HIDEKAZU ET AL) 6 February 2001 (2001-02-06)	1, 2, 15-20, 29-31
Y	the whole document -----	21-28
X	US 6 093 940 A (ISHINAGA ET AL) 25 July 2000 (2000-07-25)	1-4, 7, 9-11, 15-20, 29, 31
Y	the whole document	8, 12-14
X	WO 03/098709 A (ROHM CO., LTD; ISOKAWA SHINJI) 27 November 2003 (2003-11-27)	1-6, 15-20, 29, 31
Y	the whole document & EP 1 528 602 A (ROHM CO., LTD) 4 May 2005 (2005-05-04) -----	13, 14
	- / "	

☒ Further documents are listed in the continuation of box C

☒ Patent family members are listed in annex

* Special categories of cited documents

- 'A' document defining the general state of the art which is not considered to be of particular relevance
- 'E' earlier document but published on or after the international filing date
- 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- 'O' document referring to an oral disclosure, use, exhibition or other means
- 'P' document published prior to the international filing date but later than the priority date claimed

T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

- 'X' document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- 'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

'&' document member of the same patent family

Date of the actual completion of the international search

25 May 2005

Date of mailing of the international search report

U 09 2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/189236 A1 (ARNDT KARLHEINZ) 9 October 2003 (2003-10-09)	1-4,7,9, 15-20, 29,31
Y	the whole document -----	13,14
Y	US 6 392 778 B1 (PERDUIJN ARMAND B ET AL) 21 May 2002 (2002-05-21) abstract	21-28
Y	US 5 914 501 A (ANTLE ET AL) 22 June 1999 (1999-06-22) the whole document -----	12-14
Y	US 6 516 516 B1 (LEE BYEONG-DUCK) 11 February 2003 (2003-02-11)	8
A	the whole document -----	1-31
A	WO 98/20718 A (SILICONIX INCORPORATED) 14 May 1998 (1998-05-14) the whole document -----	1-31

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International application No
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons

- 1 ☐ Claims Nos
because they relate to subject matter not required to be searched by this Authority, namely
- 2 ☐ Claims Nos
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out specifically
- 3 ☐ Claims Nos
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows

see additional sheet

- 1 ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims
- 2 ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee
- 3 ☐ As only some of the required additional search fees were timely paid by the applicant this International Search Report covers only those claims for which fees were paid, specifically claims Nos
- 4 ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims, it is covered by claims Nos

1-31

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest
- ☐ No protest accompanied the payment of additional search fees

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-31

A light emitting package comprising a chip carrier, a light emitting chip attached to the top surface of the chip carrier, and a lead frame attached to the top surface of the chip carrier.

2. claims: 32-37

A light emitter comprising a chip carrier, a light emitting chip attached to the top surface of the chip carrier, a lead frame electrically contacting electrodes of the light emitting chip, and a support with printed circuitry, the lead frame electrically contacting the printed circuitry, and the chip carrier secured to the support without the lead frame intervening therebetween.

INTERNATIONAL SEARCH REPORT

Information on patent family members

IntertWonal Application No

PCT/US2004/041392

Patent document cited in search report		Publication date	Patent family member(s)			Publication data
US 6184544	BI	06-02-2001	JP	11220170	A	10-08-1999
			JP	11220178	A	10-08-1999
			DE	19901916	AI	05-08-1999
			DE	19901917	AI	05-08-1999
			DE	19901918	AI	29-07-1999
			US	6335545	BI	01-01-2002

US 6093940	A	25-07-2000	JP	10290029	A	27-10-1998
			US	5942770	A	24-08-1999

wo 03098709	A	27-11-2003	JP	2003338640	A	28-11-2003
			CN	1545739	A	10-11-2004
			EP	1528602	AI	04-05-2005
			wo	03098709	AI	27-11-2003

EP 1528602	A	04-05-2005	JP	2003338640	A	28-11-2003
			EP	1528602	AI	04-05-2005
			CN	1545739	A	10-11-2004
			wo	03098709	AI	27-11-2003

US 2003189236	AI	09-10-2003	US	2003025170	AI	06-02-2003
			US	2002089047	AI	11-07-2002
			US	2004238930	AI	02-12-2004
			wo	9907023	AI	11-02-1999
			DE	29825022	UI	01-04-2004
			DE	29825062	UI	22-07-2004
			DE	59812835	DI	07-07-2005
			EP	1566846	A2	24-08-2005
			EP	1004145	AI	31-05-2000
			JP	2001518692	T	16-10-2001
			TW	408460	B	11-10-2000
			US	6376902	BI	23-04-2002

US 6392778	BI	21-05-2002	wo	0055925	AI	21-09-2000
			EP	1082765	AI	14-03-2001
			JP	2002539626	T	19-11-2002

US 5914501	A	22-06-1999	DE	19919944	AI	09-03-2000
			GB	2341018	A	01-03-2000
			JP	2000077718	A	14-03-2000
			KR	2000017513	A	25-03-2000
			TW	418548	B	11-01-2001

US 6516516	BI	11-02-2003	KR	214463	BI	02-08-1999
			JP	9219465	A	19-08-1997
			US	5821615	A	13-10-1998

wo 9820718	A	14-05-1998	AU	5087698	A	29-05-1998
			wo	9820718	AI	14-05-1998
